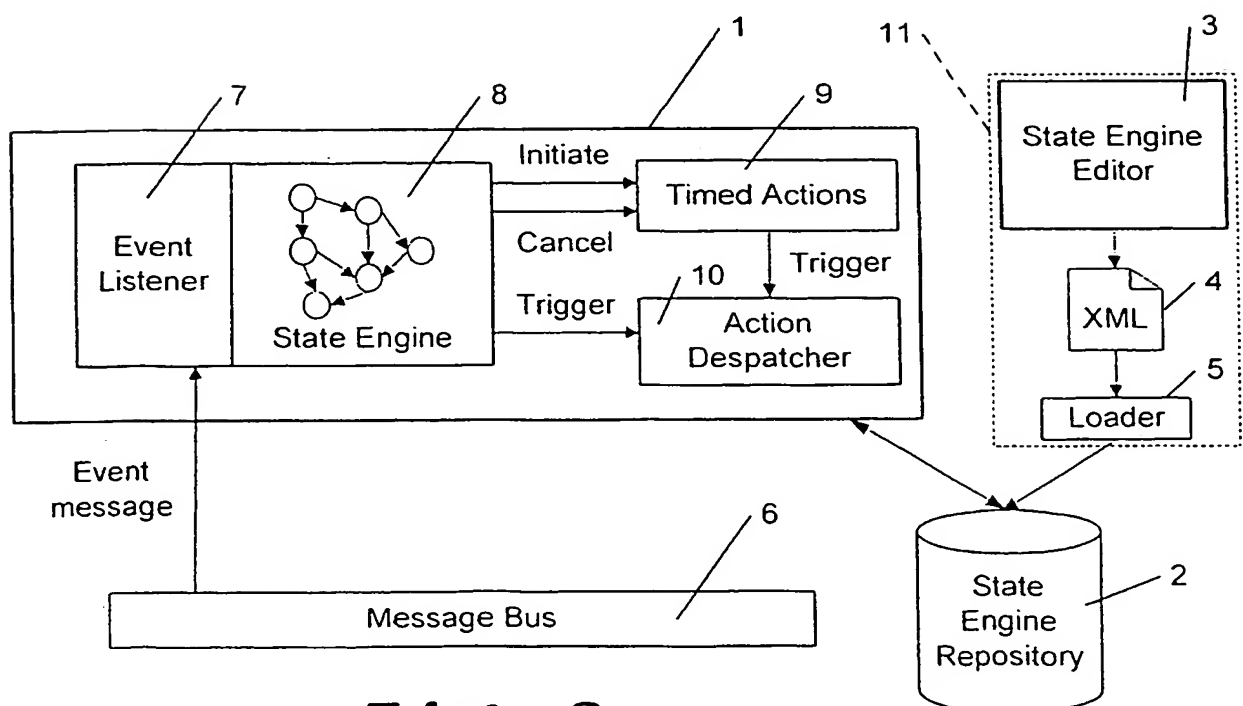
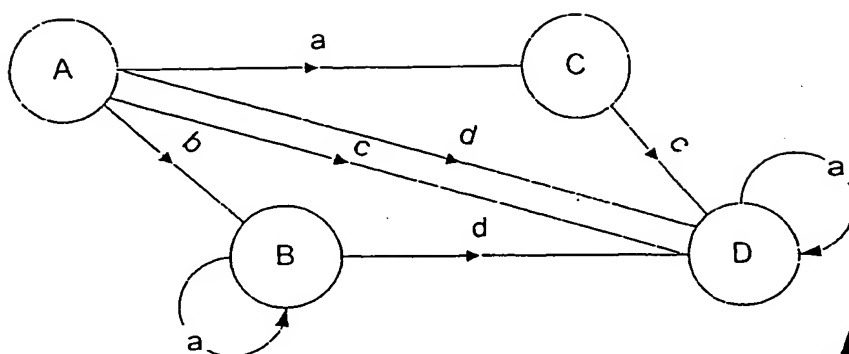
**Fig. 1****Fig. 2**

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**Fig. 3**

Current State / Incoming Event	State A	State B	State C	State D
Event a	New State: State C Action 1 Action 2 Timed Action 1	Action 7 Timed Action 2		Action 1
Event b	New State: State B Action 3 Timed Action 2 Timed Action 3			
Event c	New State: State D Action 4 Action 5 Action 6		New State: State D Action 4 Action 5	
Event d	New State: State D Action 5	New State: State D Action 3 Action 5		

**Fig. 4**

Element	Description
<BPSE>	Global element for the business process state engine repository
<ObjectTypes>	Definition of object types
<ObjectType xid=string>	Unique Ref ID of the object type (system generated)
<Name>string</Name>	Name of the object type
<Description>string</Description>	Description of the object type
</ObjectType>	
<ObjectType xid=string>	
...	
</ObjectTypes>	
<Diagrams>	Definition of state diagrams
<Diagram xid=string>	Unique Ref ID of the diagram (system generated)
<Name>string</Name>	Name of the diagram
<Description>string</Description>	Description of the diagram
<ObjectTypeRef xid=string>	Ref of the object type on which the diagram applies
</Diagram>	
<Diagram xid=string>	
...	
</Diagrams>	
<States>	
<State xid=string>	Unique Ref ID of the state (system generated)
<Name>string</Name>	Name of the state
<Description>string</Description>	Description of the state
<DiagramRef xid=string>	Ref to the diagram to which the state belongs
</State>	
<State xid=string>	
...	
</States>	
<Events>	
<Event xid=string>	Unique Ref ID of the event (system generated)
<Name>string</Name>	Name of the event
<Description>string</Description>	Description of the event
<ObjectTypeRef xid=string>	Object type on which event is applicable
</Event>	
<Event xid=string>	
...	
</Events>	

**Fig. 5a**

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<Actions>	
<Action xid=string>	Unique Ref ID of the action (system generated)
<Name>string</Name>	Name of the action
<Description>string</Description>	Description of the action
<ObjectTypeRef xid=string>	Object types on which action is applicable (optional)
</Action>	
<Action xid=string>	
...	
</Actions>	
<TimedActions>	
<TimedAction xid=string>	Unique Ref ID of the timed action (system generated)
<Name>string</Name>	Name of the timedaction
<Description>string</Description>	Description of the timed action
<ObjectTypeRef xid=string>	Object types on which timed action is applicable (optional)
<TimeOut>string</TimeOut>	Time when action(s) will fire (dd hh:mm)
<Actions>	Action(s) that will fire when timeout expires
<Action xid=string />	Ref to the action to be fired
...	
</Actions>	
</TimedAction>	
<TimedAction xid=string>	
...	
</TimedActions>	
<Transitions>	
<Transition xid=string>	
<TriggeringEvent xid=string />	Ref to the event that triggers the transition
<Diagram xid=string />	Ref to the state digram to which the transition belongs
<Source xid=string />	Ref to the source state of the transition
<Target xid=string />	Ref to the target state of the transition
<Actions>	Ref to the actions to be taken when transition occurs
<Action xid=string />	
...	
</Actions>	
<TimedActions>	Ref to timed actions to be scheduled
<TimedAction xid=string>	
...	
</TimedActions>	
</Transitions>	
</BPSE>	

**Fig. 5 b**

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Element	Description
<EventMessage>	Global element for the event message
<Header>	Event header information
<Origin>string</Origin>	Origin (system that generated the message on the bus)
<MessageDateTime>string</MessageDateTime>	When the message was sent (DD-MM-YYY HH:MM:SS)
<EventType>string</EventType>	What type of event
<EventDateTime>string</SendDateTime>	When the original event was created (DD-MM-YYY HH:MM:SS)
<Location>string</Location>	Where the event was created
<User>string</User>	Who created the event
<Reason>string</Reason>	Why the event was created
<Method>string</Method>	How the event was created
<ObjectType>string</ObjectType>	Object type on which the event applies
<ObjectID>string</ObjectID>	Object ID on which the event applied
</Header>	
<Object>	Specific Object data associated with the event - format specific to the object type
<ObjectData1>...<ObjectData1>	Object specific data
...	
<ObjectDataN>...<ObjectDataN>	Object specific data
</Object>	
</EventMessage>	

**Fig. 5c**

Element	Description
<ActionMessage>	Global element for the action message
<Header>	Action header information
<Origin>string</Origin>	Origin (system that generated the message on the bus)
<MessageDateTime>string</MessageDateTime>	When the message was sent (DD-MM-YYY HH:MM:SS)
<ActionType>string</ActionType>	What type of action
<Reason>string</Reason>	Why the action was triggered
<ObjectType>string</ObjectType>	Object type on which the action applies
<ObjectID>string</ObjectID>	Object ID on which the action applies
</Header>	
<Object>	Specific Object data associated with the event - format specific to the object type
<ObjectData1>...<ObjectData1>	Object specific data
...	
<ObjectDataN>...<ObjectDataN>	Object specific data
</Object>	
</ActionMessage>	

**Fig. 5d**

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**State Engine Editor**

**Entities** | **Diagrams** | **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>Object types

Object Type Editor

Name:   
Description:

New Update Delete

Name	Description
<u>Package</u>	Package
<u>Order</u>	Shipping Order
<u>CSTask</u>	Customer Service Task

**Fig. 6**

**State Engine Editor**

**Entities** | **Diagrams** | **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>Events

Event Editor

Name:   
Description:   
Object type:

New Update Delete

Name	Description	Object type
<u>Created</u>	Package created	Package
<u>CarrierIntransit</u>	Carrier in transit	Package
<u>CarrierPOD</u>	Carrier proof of delivery	Package
<u>CPScanIn</u>	Scan in by CP	Package
<u>DeliveredUser</u>	Delivered to User	Package

**Fig. 7**

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**State Engine Editor**

Entities | Diagrams | Repository

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>Actions

Action Editor

Name  
Description  
Object type

New Update Delete

Name	Description	Object type
<u>LogEvent</u>	Log event	
<u>CarrierCollect</u>	Notify Carrier to collect	Package
<u>NotifyUser</u>	Send message to recipient	Package

**Fig. 8**

**State Engine Editor**

Entities | Diagrams | Repository

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>TimedActions

Timed Action Editor

Name  
Description  
Object type  
Timer (dd hh:mm)  
Generic Actions  
Object Specific Actions

New Update Delete

Name	Description	Object type
<u>DelUncollected</u>	Delivery package uncollected	Package
<u>DeliveryLate</u>	Delivery delayed	Package
<u>RetUncollected</u>	Return not collected by carrier	Package

**Fig. 9**



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**State Engine Editor**

**Entities** | **Diagrams** | **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>StateDiagrams

State Diagram Editor

Name: \_\_\_\_\_  
Description: \_\_\_\_\_  
Object type: \_\_\_\_\_

New Update Delete

Name	Description	Object type
<u>PkgDelivery</u>	Package Delivery flow	Package
<u>PkgReturn</u>	Package return flow	Package
<u>PickProcess</u>	Package picking flow	Order

**Fig. 10**

**State Engine Editor**

**Entities** | **Diagrams** | **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>States

State Editor

Name: \_\_\_\_\_  
Description: \_\_\_\_\_  
State Diagram: \_\_\_\_\_

New Update Delete

Name	Description	State Diagram
<u>Created</u>	Package created	PkgDelivery
<u>InTransit</u>	Package in transit	PkgDelivery
<u>DeliveredCP</u>	Package delivered in CP	PkgDelivery
<u>DeliveredUser</u>	Package delivered to user	PkgDelivery

**Fig. 11**

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**State Engine Editor**

**Entities** **Diagrams** **Repository**

PkgDelivery  
PkgReturn  
PickProcess

Source State

None  
Created  
InTransit  
DeliveredCP  
DeliveredUser

Diagrams>PkgDelivery>Created

**Transition Editor**

Triggering Event

Target State

Generic Actions

Object Specific Actions

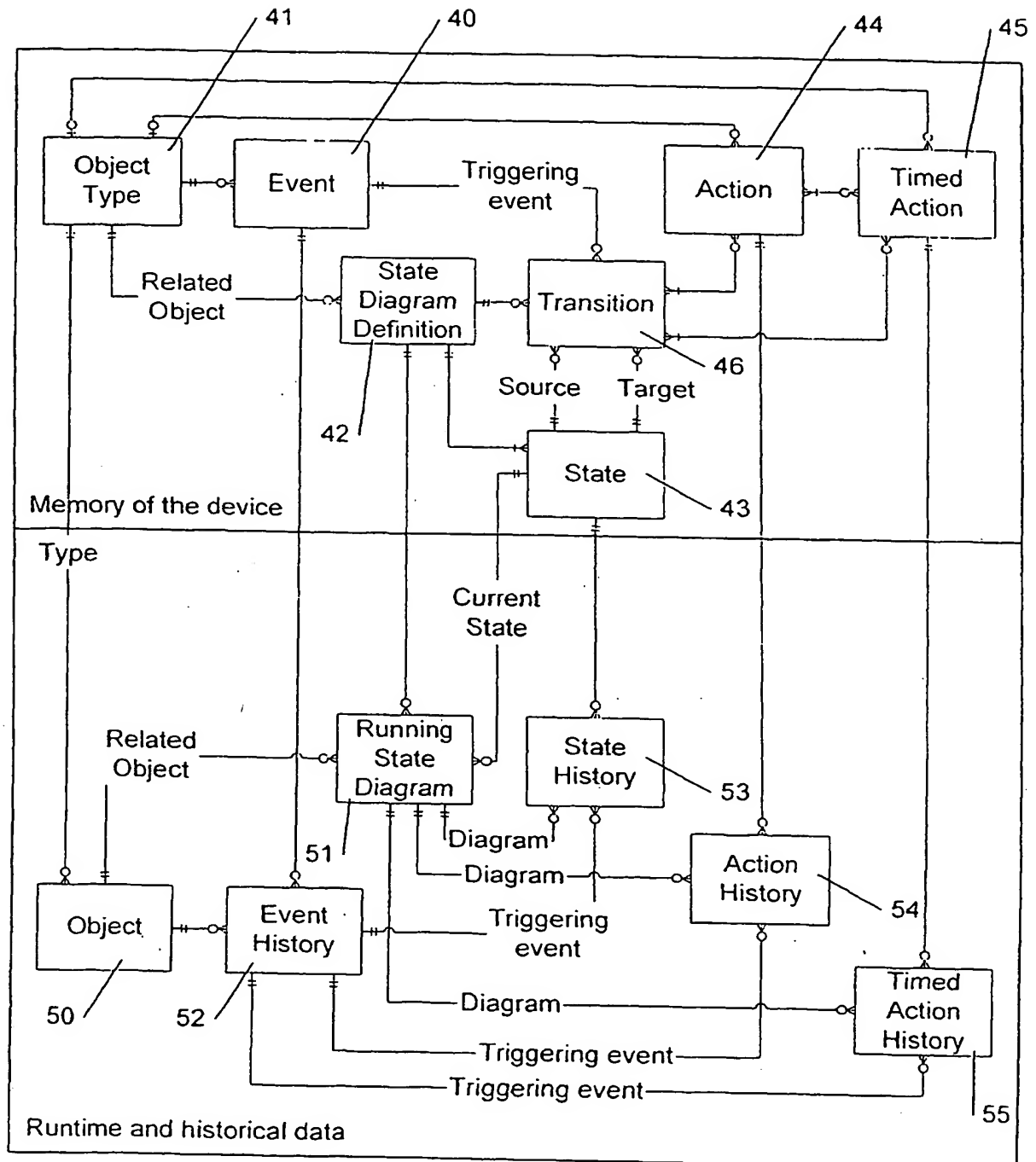
Generic Timed Actions

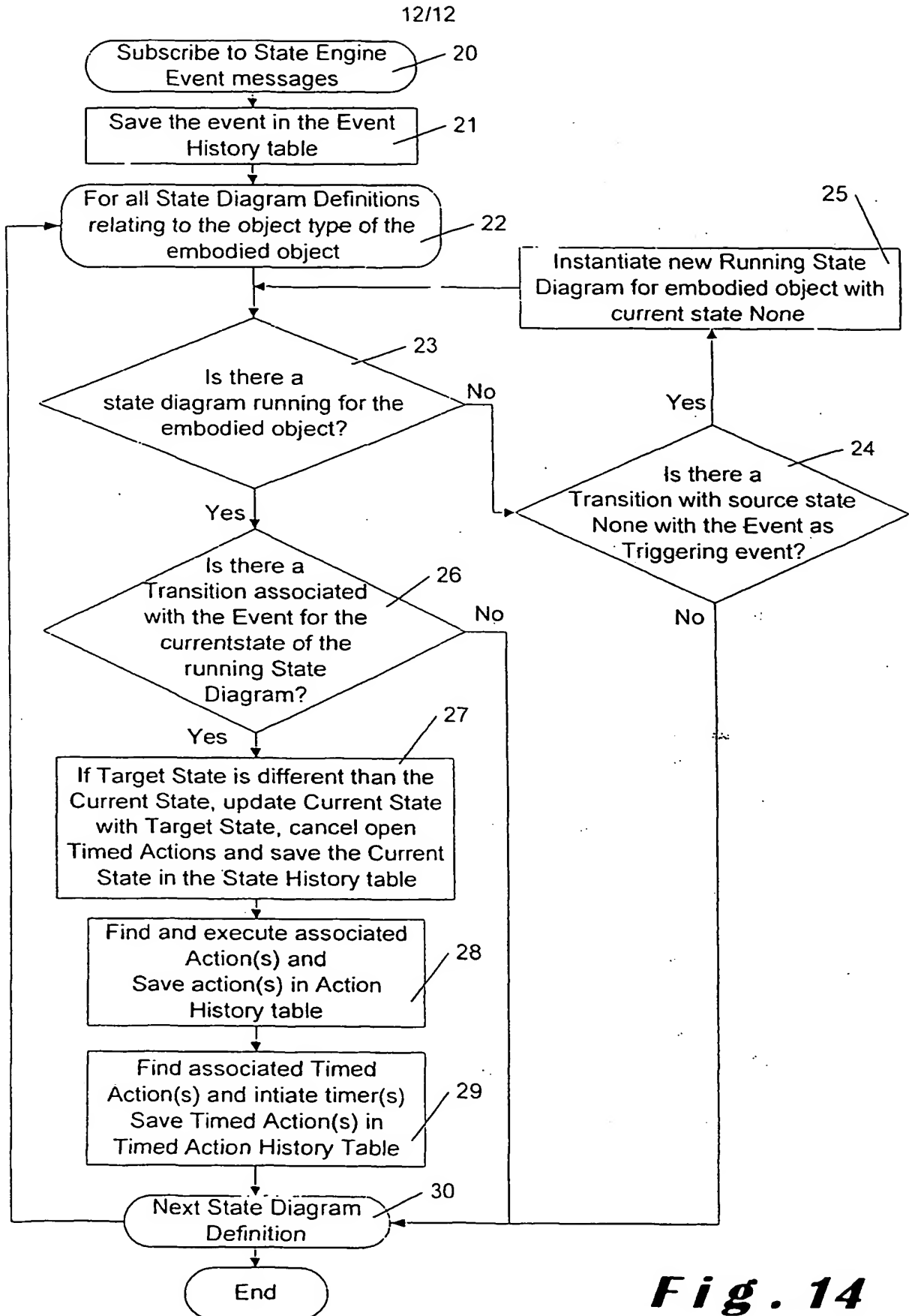
Object Specific Timed Actions

Triggering Event	Target State
<u>Created</u>	Created
<u>CarrierIntransit</u>	InTransit
<u>CarrierPOD</u>	DeliveredCP
<u>CPScanIn</u>	DeliveredCP
<u>DeliveredUser</u>	DeliveredUser

**Fig. 12**

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**Fig. 13**

**Fig. 14**